



January 22, 2026

TUV SUD America CB
10 Centennial Drive FL2
Peabody, MA 01960

Attention: Director of Certification

RE: Analysis of RF Exposure per KDB 447498 D01 RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices v06 and RSS-102 Issue 5 March 2015.

1. General Information: (The EUT contains an 80GHz Radar and BLE module with FCC ID: SQG-BL54L15, IC: 3147A-BL54L15. Radios 802.15.4 and NFC are disabled)

Applicant:	Nivelco Process Control Co.
Environment:	General Population/Uncontrolled Exposure
Exposure Conditions:	Mobile
FCC ID:	S7W-W200
IC:	35045-W200
Model:	W24

2. Technical Information:

EUT Description:	Industrial Non-Contact 80GHz microwave level transmitter
Frequency Range:	77 – 81GHz
Antenna Type:	1.5" Antenna
Antenna Gain:	27.8 dBi
PRF:	1Hz
Frame Time:	1000 ms
Radar Type:	FMCW

EUT Description:	BLE Radio
Frequency Range:	2400 – 2483.5MHz
Antenna Type:	i-Flex PIFA Antenna
Antenna Gain:	2.32 dBi

3. Limits:

Limits for General Population/Uncontrolled Exposure (Title 47 Subpart J §2.1091 and KDB 447498 D01 referring to limits under §1.1310)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Electric Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time (minutes)
0.3 - 1.34	614	1.63	*(100)	<30
1.34 - 30	824/f	2.19/f	*(180/f ²)	<30
30 - 300	27.5	0.073	0.2	<30
300 - 1500	-	-	f/1500	<30
1500 - 100,000	-	-	1.0	<30

f = frequency in MHz

*Plane-wave equivalent power density

Limits for Devices Used by the General Public (Uncontrolled Environment (RSS-102 Issue 5 March 2015))

Frequency Range (MHz)	Electric Field Strength (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003 - 10 ²¹	83	90	-	Instantaneous
0.1 - 10	-	0.73/f	-	6**
1.1 - 10	87/f ^{0.5}	-	-	6**
10 - 20	27.46	0.0728	2	6
20 - 48	-58.07/f ^{0.25}	0.1540/f ^{0.25}	8.944/f ^{0.5}	6
48 - 300	22.06	0.05852	1.291	6
300 - 6000	3.142 f ^{0.3417}	0.008335 f ^{0.3417}	0.02619 f ^{0.6834}	6
6000 - 15000	61.4	0.163	10	6
15000 - 150000	61.4	0.163	10	616000/f ^{1.2}
150000 - 300000	0.158f ^{0.5}	4.21 x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616000/f ^{1.2}

f is frequency in MHz

*Based on nerve stimulation (NS)

** Based on specific absorption rate (SAR)

4. Mobile MPE Calculation using a 20cm separation distance:

Mode	Output Power (dBm)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)	ISED Limit (mW/cm ²)
80GHz RADAR	26.4	0.08687	1	1
BLE	6.77	0.00156	1	0.535
Total	-	0.08843	1	0.535

5. Mobile MPE Calculation using a 20cm separation distance

Using Power Density formula:

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to isotropic

R = distance to the center of radiation of the antenna

6. Mobile MPE Calculation using a 20cm separation distance

80GHz RADAR:

Maximum peak output power at antenna input terminal:	26.4	(dBm)
Maximum peak output power at antenna input terminal:	436.64	(mW)
Antenna gain(typical):	0	(dBi)
Maximum antenna gain:	1	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	80000	(MHz)
FCC MPE limit for uncontrolled exposure at prediction frequency:	1.0	(mW/cm ²)
ISED MPE limit for uncontrolled exposure at prediction frequency:	0.535	(mW/cm ²)
Power density at prediction frequency:	0.08687	(mW/cm ²)
FCC Margin of Compliance:	-8.29	(dB)
ISED Margin of Compliance:	-5.58	(dB)

BLE Radio:

Maximum peak output power at antenna input terminal:	6.62	(dBm)
Maximum peak output power at antenna input terminal:	4.60	(mW)
Antenna gain(typical):	2.32	(dBi)
Maximum antenna gain:	1.706	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2440	(MHz)
FCC MPE limit for uncontrolled exposure at prediction frequency:	1.0	(mW/cm ²)
ISED MPE limit for uncontrolled exposure at prediction frequency:	0.535	(mW/cm ²)
Power density at prediction frequency:	0.00156	(mW/cm ²)
FCC Margin of Compliance:	-28.07	(dB)
ISED Margin of Compliance:	-25.36	(dB)



Sincerely,

A handwritten signature in black ink, appearing to read 'Joe Salvador', is positioned below the word 'Sincerely,'.

Joe Salvador

Name

Authorized Signatory

Title: Wireless/RF Test Engineer